

**CLAIMS:**

1. A process to isomerize C<sub>10+</sub> hydrocarbon feedstreams comprising:
  - a) contacting a C<sub>10+</sub> hydrocarbon feedstream with a steamed catalyst comprising a unidimensional 10-ring medium pore zeolite under hydroisomerization conditions including:
    - i) temperatures of about 400 to about 800°F; and
    - ii) pressures of about 400 to about 2000 psig;wherein said steamed catalyst is steamed under conditions such that the alpha value of said steamed catalyst does not exceed the alpha value of an unsteamed catalyst comprising the same unidimensional 10-ring medium pore zeolite by more than about 1 to about 10.
2. The process according to Claim 1 wherein said steamed catalysts are steamed for less than about 10 hours at a temperature ranging from about 700°F to about 1000°F.
3. The process according to Claim 2 wherein said steamed catalysts are steamed for about 2 to about 8 hours at a temperature ranging from about 700°F to about 1000°F.

4. The process according to Claim 1 wherein said unidimensional 10-ring medium pore zeolites is ZSM-22, ZSM-23, ZSM-35, ZSM-57, ZSM-48, and ferrierite.
5. The process according to Claim 4 wherein said unidimensional 10-ring medium pore zeolites is ZSM-22, ZSM-23, ZSM-35, ZSM-48, and ZSM-57.
6. The process according to Claim 5 wherein said molecular sieve is ZSM-48.
7. The process according to Claim 6 wherein said steamed catalyst is steamed under conditions such that the alpha value of said steamed catalyst does not exceed the alpha value of an unsteamed catalyst comprising the same unidimensional 10-ring medium pore zeolite by more than about 1 to about 5.
8. The process according to Claim 7 wherein said steamed catalyst is steamed under conditions such that the alpha value of said steamed catalyst does not exceed the alpha value of an unsteamed catalyst comprising the same unidimensional 10-ring medium pore zeolite by more than about 1 to about 3.

9. The process according to claim 8 wherein the product selectivity of the hydroisomerization process improves by more than about 2%.
10. The process according to claim 9 wherein the product selectivity of the hydroisomerization process improves by more than about 3%.
11. The process according to claim 10 wherein the product selectivity of the hydroisomerization process improves by more than about 5%.
12. The process according to claim 6 wherein said unidimensional 10-ring medium pore zeolites further comprise at least one Group VIII metal.
13. The process according to Claim 12 wherein said Group VIII metal is a Group VIII noble metal.
14. The process according to Claim 13 wherein said Group VIII noble metal is Pt.
15. The process according to Claim 12 wherein said catalyst is steamed after the addition of the metals.

16. The process according to Claim 15 wherein said unidimensional 10-ring medium pore zeolites comprise at least one binder or matrix material selected from clays, silica, and alumina.

17. The process according to Claim 16 wherein said binder or matrix material is alumina present in a ratio of less than about 15 parts zeolite to one part binder.

18. The process according to Claim 17 wherein said alumina is present in a ratio of less than about 5 parts zeolite to one part binder.

19. The process according to Claim 18 wherein said alumina is present in a ratio of about 2 parts zeolite to one part binder.

20. A process to isomerize  $C_{10+}$  hydrocarbon feedstreams comprising:

- a) contacting a  $C_{10+}$  hydrocarbon feedstream with a steamed catalyst comprising a unidimensional 10-ring medium pore zeolite selected from ZSM-22, ZSM-23, ZSM-35, ZSM-57, ZSM-48, and ferrierite under hydroisomerization conditions including:
  - i) temperatures of about 400 to about 800°F and

- ii) pressures of about 400 to about 2000 psig,  
wherein said steamed catalyst is steamed under conditions such that the  
alpha value of said steamed catalyst does not exceed the alpha value of an  
unsteamed catalyst comprising the same unidimensional 10-ring medium  
pore zeolite by more than about 1 to about 10.
21. The process according to Claim 20 wherein the steamed catalysts has an  
alpha value within a range of about 1 to about 5 of the unsteamed catalyst.
22. The process according to Claim 21 wherein said steamed catalysts are  
steamed for less than about 8 hours at a temperature ranging from about 700°F to  
about 1000°F.
23. The process according to Claim 22 wherein said unidimensional 10-ring  
medium pore zeolites further comprise a Group VIII noble metal.
24. The process according to Claim 23 wherein said unidimensional 10-ring  
medium pore zeolites contains Pt.

25. A process to isomerize C<sub>10+</sub> hydrocarbon feedstreams comprising:
  - a) contacting a C<sub>10+</sub> hydrocarbon feedstream with a steamed Pt impregnated ZSM-48 catalyst, comprising alumina in a ratio of about 2 parts alumina to one part zeolite, under hydroisomerization conditions including:
    - i) temperatures of about 400 to about 800°F; and
    - ii) pressures of about 400 to about 2000 psig, wherein the alpha value of said steamed Pt impregnated ZSM-48 catalyst does not exceed the alpha value of an unsteamed Pt impregnated ZSM-48 by more than about 1 to about 10 said steamed Pt impregnated ZSM-48 catalyst has been steamed after Pt impregnation for about 2 to about 8 hours at a temperature ranging from about 800°F to about 900°F to improve product selectivity of the hydroisomerization process by greater than about 2%.